Profoto B2 250 AirTTL

User´s Guide

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Profoto Air

Profoto®
The Light Shaping Company™

Congratulations on your new Profoto product!

Regardless if you chose a new flash or a new light-shaping tool, know that almost half a century's worth of experience was put into its making.

If the years have taught us one thing, it is to never neglect a single detail. We only put our name on a product in which we have the fullest confidence. Before shipping, every one of our products pass an extensive and strict testing program. Unless it complies with the specified performance, quality and safety, it is a no-go.

As a result, we are confident that your new Profoto product will stay with you for years and help you grow as a photographer.

But getting the product is only the beginning of that journey. Using it for light shaping is the real adventure. That is why we take pride in providing you with such a wide assortment of light-shaping tools, allowing you to shape the light in any way you can imagine.

The almost infinite possibilities might seem bewildering at first, but we're certain you will soon get the hang of it.

Still, I encourage you to sign up for our newsletter at www.profoto.com/newsletter or visit our blog at www.profoto.com/blog so that we can share our experience from almost 50 years of light shaping and hopefully inspire you to grow even further.

Enjoy your Profoto product!

Conny Dufgran, founder

General safety instructions

SAFETY PRECAUTIONS!

Do not operate the equipment before studying the instruction manual and the accompanying safety. Make sure that Profoto Safety Instructions is always accompanied the equipment! Profoto products are intended for professional use! Generator, lamp heads, and accessories are only intended for indoor photographic use. Do not place or use the equipment where it can be exposed to moisture, extreme electromagnetic fields, or in areas with flammable gases or dust! Do not expose the equipment to dripping or splashing. Do not place any objects filled with liquids, such as vases, on or near the equipment. Do not expose the equipment to hasty temperature changes in humid conditions as this could lead to condensation water in the unit. Do not connect this equipment to flash equipment from other brands. Glass cover shall be changed if become visibly damaged to such an extent that its effectiveness impaired, for example by cracks or deep scratches. If unit is broken it should be sent to authorized service station.

WARNING – Electrical Shock – High Voltage!

Mains powered generators shall always be connected to a mains socket outlet with a protective earthing connection! Only use Profoto extension cables! Do not open or disassemble generators or lamp heads! Equipment operates with high voltage. Generator capacitors are electrically charged for a considerable length of time after being turned off. The disconnect device shall remain readily operable. Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as direct sunlight, fire, or the like.

Safety advices for Lithium-Ion batteries

Do not crush. Do not heat or incinerate. Do not short-circuit. Do not dismantle. Do not immerse in any liquid, as this may cause the battery to vent or rupture.

Caution – Burn Hazard – Hot Parts!

Do not touch hot parts with bare fingers! Modeling lamps, flash tubes, protective glass, and certain metal parts emit strong heat when used! Do not point modeling lamps or flash tubes too close to persons. All lamps may on rare occasions explode and throw out hot particles!

NOTICE

NOTICE – Equipment Overheating Risk

Remove transport cap from lamp head before use! Do not obstruct ventilation by placing filters, diffusing materials, etc. over inlets and outlets of the equipment ventilation or directly over glass cover, modeling lamp, or flash tube!

Note about RF!

This equipment makes use of the radio spectrum and emits radio frequency energy. Proper care should be taken when the device is integrated in systems. Make sure that all specifications within this document are followed, especially those concerning operating temperature and supply voltage range. Make sure the device is operated according to local regulations. The frequency spectrum this device is using is shared with other users. Interference cannot be ruled out.

Final Disposal

Equipment contains electrical and electronic components that could be harmful to the environment. Equipment may be returned to Profoto distributors free of charge for recycling according to WEEE. Follow local legal requirements for separate disposal of waste, for instance WEEE directive for electrical and electronic equipment on the European market, when product life has ended!

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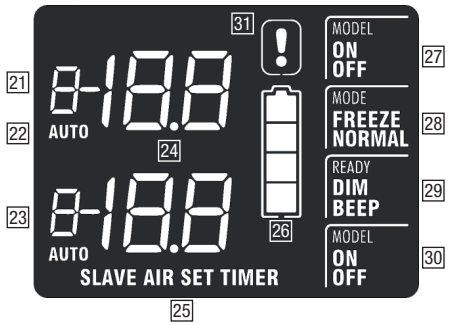
Nomenclature

1. Lamp head outlet 1
2. Lamp head outlet 2
3. IR-Slave eye
4. TEST button
5. LCD Display
6. SYNC button
7. SET button
8. ON button
9. MODEL button 1
10. MODE button
11. READY button
12. MODEL button 2
13. ENERGY/SETTINGS dial 1
14. ENERGY/SETTINGS dial 2

15. Sync connector
16. USB port
17. Battery
18. Battery charging connector
19. Battery CHECK button
20. Battery release button



21. Group setting 1
22. Automatic flash exposure indicator (TTL)
23. Group setting 2
24. Light output setting (visible only when lamp head is connected)
25. Sync/Air setting
26. Battery level indicator
27. Modeling light setting 1
28. Mode setting
29. Ready signal setting
30. Modeling light setting 2
31. Temperature limit indicator

32. Lamp head plug
33. Protective glass
34. Umbrella holder

35. Stand attachment screw
36. Tilt-lock handle
37. Clamp screw
38. Stand adapter

39. Profoto Battery Charger 2.8A

40. Profoto Car Charger 1.8A (optional)

41. B2AirTTL Extension Cable 3m (optional)

Operation

Quick guide

For detailed operating instructions, see subsequent sections.

1. Charge the battery (see page 16).
2. Mount the battery (see page 16).
3. Remove the protective cap from the B2 lamp head.
4. Mount the B2 lamp head on a traditional light stand or any special equipment (see page 16).
5. Connect the B2 lamp head to the B2 generator (see page 17).
6. Switch on the B2 unit by pressing the ON button [8] (see page 11).
7. Select Sync setting with the SYNC button [6] (see page 12). When using the wireless Air setting, make sure to set the same channel on both generator and remote control.
8. Set the flash light output of the connected lamp head with the corresponding ENERGY/SETTINGS dial [13] or [14] (see page 11). Note that the flash light output is set automatically when the TTL function is used.
9. Release a test flash by pressing the TEST button [4] (see page 7).
10. Turn on/off the modeling light of the connected lamp head by the corresponding MODEL button [9] or [12] (see page 13).
11. Select Freeze/Normal mode by pressing the MODE button [10] (see page 13).
12. Select Ready signal setting with the READY button [11] (see page 14).
13. Mount Light Shaping Tools (see page 17).

Power on/off

To switch on/off the B2 unit, press and hold the ON button [8] for 1 second.

When the B2 unit is switched off, the current settings are stored and will apply when the unit is switched on again.

The B2 unit automatically goes into sleep mode after 30 minutes and shuts off completely after one hour of inactivity to save battery life.

Set light output in manual mode (Energy level)

The output of the flash light is shown in a relative f-stop scale in the light output setting section [24] on the display. The maximum energy (250 Ws) is shown as 10.0.

To change the energy level of the connected flash light, use the corresponding ENERGY/SETTINGS dial [13] or [14]. The setting can also be done on the optional Air Remote TTL, Air Remote or Air USB.

The TEST button [4] is illuminated when the B2 is fully charged and ready to flash.

To release a test flash, press the TEST button [4].

Note that the flash light output is set automatically when shooting in TTL mode with the optional Air Remote TTL.

Select Sync setting
The current sync setting is shown in the Sync/Air setting section [25] on the display.

Wireless sync settings:

- AIR: The built-in Profoto Air transceiver is activated. The B2 is set to be triggered and/or controlled from any of the optional Profoto Air transceivers offered by Profoto.
- SLAVE: The built-in IR-Slave eye [3] is activated. The flash will slave sync if another flash is fired or if an IR signal is detected.

Cable sync only:

- Blank: When the Sync/Air setting section [25] is blank, the B2 can only be synced via a cable.

To select sync setting, press the SYNC button [6].

Air (and TTL) operation
When 'AIR' is shown in the Sync/Air setting section [25], the B2 is set to be triggered and/or controlled from any of the optional Profoto Air transceivers offered by Profoto. The B2 supports all available Air accessories offered by Profoto, including those listed in the table below.

1. Activate Air by pressing the SYNC button [6] until 'AIR' is displayed.
2. To view the current channel setting, press the SET button [7] once. The channel setting is displayed with a blinking value.
3. While the channel setting is blinking, turn the ENERGY/SETTINGS dial 2 [14] to change the channel.
4. To change the group, press the SET button [7] until the group settings [21] and [22] are blinking.
5. Turn the corresponding ENERGY/SETTINGS dial [13] or [14] to change the group of the lamp head.

NOTE:
There are eight different channels (1-8) that can be set, and each channel has 6 groups (A-F). All lights set to the same channel will be synced together. Groups are used to remotely control individual lights or groups of lights on the same channel when a set-up is made with more than one light.

The TTL function can only be enabled in group A-C.

Air Accessories compatible with the B2 (For operating instructions, refer to the user guide of respective accessory).

Optional Profoto Air accessory	Usable features in combination with B2 250 AirTTL			
	Flash sync	Remote control	TTL (Automatic flash setting)	HSS (High Speed Sync)
Air Remote TTL*	X	X	X	X
Air Remote**	X	X		
Air Sync**	X			
Air USB***		X		

**Optional camera mounted transceiver. Check Profoto.com for TTL supported cameras.*
***Optional camera mounted transceiver.*
**** Dongle for using Profoto Air Software.*

Slave Sync operation
When 'SLAVE' is shown in the Sync/Air setting section [25], the B2 unit senses the flash release, as well as IR signals from most IR sync transmitters.

To activate slave sync, press the SYNC button [6] until 'SLAVE' is displayed.

Cable Sync operation
Sync via cable is possible in all sync modes. Connect a sync cable from the camera or flash meter to the Sync Connector [15].

Modeling light
To turn on/off the modeling light on a lamp head, press the corresponding MODEL button [9] or [12].

The modeling lights are automatically turned off after a settable period of inactivity (1-30 minutes).

1. To set the timer, press the SET button [7] until 'SET TIMER' is displayed.
2. Turn the ENERGY/SETTINGS dial 2 [14] to change the time.

Select Freeze/Normal mode
The B2 unit can operate in two modes to maximize the versatility in different shooting situations.

- Normal mode: Optimized color temperature stability over the entire energy range. Best option for most types of shots.
- Freeze mode: Optimized for shortest flash duration. Best option for shots where the flash is used to freeze fast action. The color temperature might deviate and become slightly bluer. The flash duration increases when two lamp heads are used.

Toggle between Freeze and Normal mode by pressing the MODE button [10].

Select Ready signal
The current setting is shown in the Ready signal setting section [29]:

- BEEP: The unit beeps when it is ready to flash again after recharging.
- DIM: The modeling light is turned off after flashing, and is turned on when the unit is ready to flash again.
- DIM BEEP: The modeling light is turned off after flashing. The modeling light is turned on and the unit beeps when it is ready to flash again.
- Blank: No ready signal.

To select the ready signal setting, press the READY button [11].

The TEST button [4] is always turned off after flashing, and is illuminated when the B2 is ready to flash again.

Turn On/Off lamp head
To turn off the lamp head, press the corresponding MODEL button [9] or [12] for one second. The lamp head's light output setting [24] will show '- -' when the lamp head is turned off. To turn on the lamp head press the MODEL button once more.

Wrong exposure alarm
If a flash is released before the unit is ready, there will be a long beep and the display will blink. These signals indicate that the flash light does not fully correspond to the set value. The B2 will always flash even if the set light output cannot be met, as the image may still be usable if the catch of the moment was perfect.

Note that the sound alarm only will be activated when the Ready signal is set to 'BEEP' or 'DIM BEEP'.

Quick burst
Quick burst is an automatically activated function that allows a series (burst) of flashes to be fired at a faster pace than the B2 can recharge, without losing light output. The function is only active when the light output is set to less than full. The length of the burst, in number of flashes, depends on the repetition rate and the set light output. The lower the light output is set, the more bursts can be triggered. Thanks to this feature, the B2 can trigger several flashes on lower power output without triggering the "Wrong exposure alarm". Note that the accuracy of the light output is slightly less precise when Quick burst is active. Quick burst is indicated by blinking energy settings.

Handling

Battery status and charging

The battery status is indicated by the battery level indicator [26] on the display. The battery status can also be checked by pressing the CHECK button [19] on the battery pack. See also section *Technical data*.

For optimal performance, the battery should be fully charged prior to usage. The battery can be charged while in use and from any charge level. Only use the Profoto Battery Charger 2.8A or the Profoto Car Charger 1.8A. Do not use the Profoto Battery Charger 4.5A, as it may decrease the battery lifetime.

If the battery has not been used for a long time, the Profoto Battery Charger 2.8A should be used. The Profoto Car Charger 1.8A should not be used in this case.

1. Connect the battery charger to the battery charging connector [18] on the battery pack.
2. Check that the battery charger indicates that charging is in progress.
3. When the battery charger indicates that the charging is completed, it is recommended to disconnect the battery charger from mains power and from the battery pack.

For increased battery lifetime, do not leave the battery uncharged for a long time.

NOTE:

To ensure a long battery lifetime, the battery is designed with a built-in overtemperature protection. When the battery temperature protection is activated the battery cannot be recharged until cooled down to a safe temperature.

Battery mounting

1. To mount the battery, fit the battery pack in place and push firmly until the battery pack locks in place. Make sure there is a “click” sound, indicating that the battery pack is properly secured.
2. To dismount the battery, first switch off the B2 unit. Remove the bag, press the battery release button [20] and pull out the battery pack.

Stand mounting

The B2 lamp heads can be mounted on a traditional light stand, using the supplied stand attachment. As an alternative, the stand attachment can be removed and the lamp head can be mounted on a special grip or stand, a camera flash bracket or other special equipment for more convenient use.

Mounting on a traditional light stand:

1. Fit the stand adapter [38] to a light stand and secure it with the clamp screw [37].
2. The lamp head can be directed upwards/downwards when the tilt-lock handle [36] is loosened. Fasten the tilt-lock handle [36] when the lamp head is correctly directed.

Mounting on a special stand/grip or camera flash bracket:

1. Unscrew the stand attachment screw [35] and remove the stand attachment.
2. Thread the lamp head onto the special equipment.

Note that the thread size of the B2 lamp head is 3/8" and that a 1/4 thread insert may be needed for some grips and brackets.

Mounting Profoto Light Shaping Tools

The built-in reflector of the B2 lamp heads creates a wide and even light spread with a high output. In addition, the B2 lamp heads are compatible with more than 150 light shaping tools, which can be used to shape its already beautiful light into almost any light you can imagine.

All tools with standard reflector mount (rubber collar with clasp)

The Softbox speedring and most reflectors are equipped with Profoto's unique clamp mechanism, which makes them easy to mount on the lamp heads.

1. Unlock the clasp on the speedring or external reflector.
2. Slide the speedring or reflector onto the lamp head.
3. Secure by locking the clasp on the rubber collar.

Umbrella mounting

Umbrellas are simply mounted by sliding the umbrella shaft into the umbrella holder [34]. The diameter of the holder is designed for 8 mm shafts.

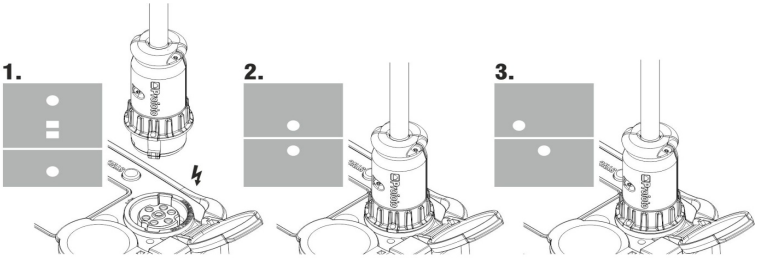
1. Slide the umbrella shaft into the umbrella holder [34].
2. After a few centimeters, there will be more friction. Continue to slide the umbrella shaft a few more centimeters into the umbrella holder [34].

Lamp head connection

Attention! Always remove the protective cap from the lamp head before use.

With Profoto's lamp head connection, heads can be connected and disconnected safely even if the generator is switched on.

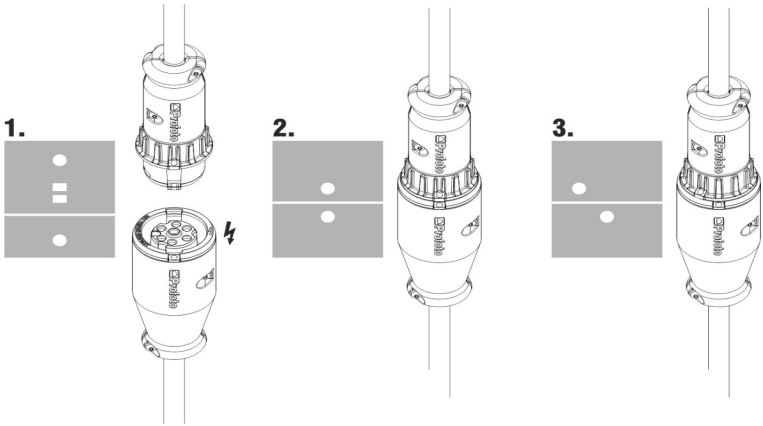
1. Lift the protection lid of the lamp head outlet and align the two white square dots on the lamp head plug (male), with the white dot on the B2 panel.
2. Push the plug (male) all the way into the generator socket (female).
3. Secure by turning the ribbed locking ring on the lamp head plug clockwise.



Extension cable connection

The extension cable is connected in the same manner as the lamp head.

1. First align the two white square dots on the lamp head plug (male), with the dot on the extension connector (female).
2. Push the plug (male) all the way into the connector (female).
3. Secure by turning the ribbed locking ring on the lamp head plug clockwise.



To protect the connectors of the extension cable, it is appropriate to connect the plug to the outlet of the cable.

Replacement of protective glass, flash tube, modeling light LED

For replacement of the protective glass, flash tube or modeling light LED, contact your local dealer or distributor for professional service.

Other

HSS

Profoto B2 supports HSS (High speed sync) if used with any of the optional Air Remote TTL tranceivers (currently available for Canon and Nikon). HSS enables shooting with flash at a faster shutter speed than the fastest external flash sync speed (x-sync) of the camera. This option can be extremely useful to limit the influence of ambient light when shooting in bright conditions.

HSS is either selected on the remote (Canon) or in the camera menu (Nikon), not on the flash. In the LCD Display [5] of the B2 a "[]" symbol will be visible a couple of seconds after every flash when HSS mode is used.

NOTE!

** During a HSS flash, the flash is pulsing to provide a constant light output during the time when the shutter is open. To ensure a perfect exposure and a stable flash pulse, the B2 uses only the upper part of its power range when in HSS Mode.*

** Frequent use of HSS will have an impact on the life-time of the B2 flash tube.*

** Your Air Remote TTL may require a firmware update in order to use the HSS feature. The lastest updates and a list of compatible cameras is available on profoto.com/myprofoto. Create your personal account and login to access all new upgrades.*

TTL

Profoto B2 supports TTL when used with any of the optional Air Remote TTL tranceivers (currently available for Canon and Nikon). With a TTL remote mounted in the camera hotshoe, you may select to let the camera control the flash output fully automatically without manual metering. TTL is selected on the remote, not on the flash. If the camera requires a flash output outside the range of the B2, the B2 will blink the energy setting on the LCD Display [5] and produce a long beep to indicate this (it will only beep if the ready signal is turned on).

The automatic flash exposure indicator [22] 'AUTO' is lit every time the flash output is set automatically by the camera. The indicator is lit for ten seconds after receiving a TTL flash command from the remote.

Find more info on the optional TTL remotes and a list of compatible cameras on Profoto.com.

Temperature limit indicator

The temperature limit indicator [31] is lit if the B2 has reached a temperature level that has activated the built-in over-temperature protection. When this occurs the performance is limited until the temperature level is back to an acceptable level.

Note that the battery has a stand alone temperature protection that may be activated without the temperature limit indicator [31] being lit. When the battery temperature protection is activated the battery cannot be recharged until cooled down to a safe temperature.

Check Firmware

1. Press both model light buttons [9] and [12] while turning on the generator [8].
2. The current firmware version is shown on the display [5] (for example: A7).

Upgrade Firmware

We recommend that you look for firmware upgrades before you start using your new B2.

To access the latest free upgrades you create your personal account on profoto.com/myprofoto. Once you have an account you can also choose to register your products and be sure you get noticed when new upgrades are released.

Upgrade of firmware is made via the USB port [16] on the B2 unit, following the instructions provided in the upgrade application downloaded from profoto.com/myprofoto. You can always contact your local dealer or distributor for professional service.

Technical data

Max Energy	250 Ws
Energy range f-stop	9 f-stop (2.0-10.0 ; 1/256-1/1)
Energy range Ws	1.0-250 Ws
Energy control increments	Dials are progressive, turning the dials quickly will result in larger energy change and vice versa.
Recycling time	0.03-1.35 s (Quick burst up to 20 flashes/ second)
Modeling light	LED 9W (Equivalent of 50W Halogen)
Mode control	Freeze (shortest flash duration) or Normal (color balanced) mode
Flash duration Normal mode (t0.5)	1/9300 s (1 Ws) - 1/1,000 s (250Ws)
Flash duration Freeze mode (t0.5)	1/15000s (1Ws) - 1/1,000 s (250Ws)
Energy stability Normal mode	±1/20 f-stop flash to flash
Energy stability Freeze mode	±1/20 f-stop flash to flash
Color stability Normal mode	±150 K over range; ±20 K flash to flash
Color stability Freeze mode	±800 K over range; ±50 K flash to flash
Light spread with built-in reflector	70 degrees
Guide number @ 2 m, 100 ISO with Magnum reflector	32 2/10
Battery	Model: Exchangeable Li-Ion battery 4S1P Type: PCA1322-0000
Battery voltage	Nominal voltage : 14.4 V Charge voltage : 16.8 V
Battery Energy / Capacity	21.6 Wh /1.5 Ah
Battery operating temperature range	Charge: 0 °C to +45 °C (32 °F to +113 °F) Discharge: -10 °C to +50 °C (14 °F to +122 °F)
Battery capacity	Up to 215 full power flashes
Battery life	300 charge cycles (80% capacity left)

Battery status indicator	Approx. battery level in percentage of the total capacity is indicated on the display: 3 sections: 100-70 % 2 sections: 70-40 % 1 section: 40-10 % Blinking: <10 %
Battery charging time	1 h
Auto power off	Yes after 60 minutes. Sleep mode activated after 30 minutes.
Wireless sync	Yes, via all Air camera transmitters or IR (Slave)

All figures are to be considered as nominal and Profoto reserves the right to make changes without further notice.

Regulatory information

Lithium-Ion battery

The Lithium-Ion battery is approved for air transport under UN 3480/3481.

World-wide Usage of Radio Spectrum

The Profoto Air system operates on the license-free 2.4GHz ISM band for SRD (Short Range Devices). This band may be used in most parts of the world. Regional restrictions may apply.

NOTE:

Refer to national regulations for the region where the Profoto Air Sync or Profoto Air Remote transceiver shall be operated and make sure that they are followed.

Unites States and Canada

F.C.C. and Industry Canada

Compliance Statement (Part 15.19) This device complies with Part 15 of FCC rules and RSS-210 of Industry Canada. Operation is subject to the following two conditions:

1) this device may not cause harmful interference and,
2) this device must accept any interference received, including interference that may cause undesired operation.

Warning (Part 15.21)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Ce dispositif est conforme aux normes RSS-210 d'Industrie Canada. L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes :

1) il ne doit pas produire de brouillage et
2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

The term 'IC' before the certification/registration number only signifies that the Industry Canada technical specifications were met.

Les lettres 'IC' n'ont aucune autre signification ni aucun autre but que d'identifier ce qui suit comme le numéro de certification/d'enregistrement d'Industrie Canada.

Profoto AB
Transmitter / Receiver
MODEL: Profoto B2 250 AirTTL 2.4 GHz
PRODUCT NO: PCA1325-0000
Contains FCC ID: W4G-RMI and IC: 8167A-RMI
Made in Sweden

Japan

The module has been granted modular approval for sale and operation in Japan.

特定無線設備の種類

Classification of specified radio equipment:
Article 2, Clause 1, Item 19

2.4 GHz Wide Band Low Power Data Communication

上記のとおり、電波法第38条の24第1項の規定に基づく認証を行ったものであることを証する。

This is to certify that the above-mentioned certification by type has been granted in accordance with the provisions of Article 38-24, Paragraph 1 of the Radio Law.

R 202WW08109201

Technical data and product information are subject to change without notice.

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Profoto Air

Profoto®
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